

transportation of foodstuffs. On the other hand, the release of off-flavours from a foodstuff is desirable before consumption or formulation with other foodstuffs. Binding experiments discussed include those in liquid systems, desiccation experiments with dry foods and microencapsulation. Copyright (C) 1996 Canadian Institute of Food Science and Technology. Published by Elsevier Science Ltd

L21 ANSWER 10 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 96:556048 SCISEARCH

THE GENUINE ARTICLE: UY274

TITLE: EVALUATION OF LIQUID-SOLID EXTRACTION WITH A NEW SORBENT AND LIQUID-LIQUID-EXTRACTION FOR MULTIRESIDUE PESTICIDES

AUTHOR: DETERMINATION IN RAW AND FINISHED DRINKING WATERS  
FERNANDEZ M J; GARCIA C; GARCIAVILLANOVA R J (Reprint);  
GOMEZ J A  
CORPORATE SOURCE: UNIV SALAMANCA, FAC FARM, DEPT QUIM ANALIT NUTR &  
BROMATOL, AVDA CAMPO CHARRO S-N, E-37007 SALAMANCA, SPAIN  
(Reprint); UNIV SALAMANCA, FAC FARM, DEPT QUIM ANALIT

NUTR

& BROMATOL, E-37007 SALAMANCA, SPAIN

COUNTRY OF AUTHOR: SPAIN

SOURCE: JOURNAL OF AGRICULTURAL AND FOOD CHEMISTRY, (JUL  
1996) Vol. 44, No. 7, pp. 1790-1795.  
ISSN: 0021-8561.

DOCUMENT TYPE: Article; Journal

FILE SEGMENT: LIFE; AGRI

LANGUAGE: ENGLISH

REFERENCE COUNT: 41

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB A comparative study is made of the application of liquid-liquid (LLE) and liquid-solid (LSE) extraction techniques with a new sorbent with trifunctional bonding chemistry (tC(18)) for environmental sampling and trace enrichment. The experimental conditions of the LLE and LSE methods were evaluated for the determination of 22 organochlorine and 2 organophosphorus pesticides, 2 triazines, and 7 polychlorinated biphenyls (PCBs), which were analyzed by gas chromatography with a capillary column and electron-capture detector (ECD). Mean recovery yields were found to be higher with the LLE method, although LSE for most of the 33 analytes assayed surpassed 70%. The detection Limits for both techniques were lower than 5 ng L(-1), except for the pesticides parathion (7 ng L(-1)), methoxychlor (8 ng L(-1)), atrazine (35 ng L(-1)), and simazine (95 ng L(-1)). The absolute standard deviations and the variation coefficients of both techniques were slightly higher in LSE and ranged from 0.5 to 2.6 ng L(-1) and 7 to 24%, respectively. The method was applied to the analysis of raw and finished drinking water from four towns with different water sources and qualities.

L21 ANSWER 11 OF 14 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 96:162672 SCISEARCH

THE GENUINE ARTICLE: TW239

TITLE: ON THE METHODOLOGY OF TRACE ORGANIC DETERMINATION IN WATER

AUTHOR: REVELSKY I A (Reprint); GOLOVKO I V; YASHIN Y S; EFIMOV I P; ZIRKO B I; GLAZKOV I N; REVELSKY A I; VULIKH P P; ZOLOTOV Y A

CORPORATE SOURCE: MOSCOW MV LOMONOSOV STATE UNIV, DEPT CHEM, DIV ANALYT CHEM, MOSCOW 119899, RUSSIA

PUB. COUNTRY: GERMANY: Germany, Federal Republic of  
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)  
LANGUAGE: German  
FILE SEGMENT: Priority Journals  
ENTRY MONTH: 199805  
ENTRY DATE: Entered STN: 19980514  
Last Updated on STN: 19980514  
Entered Medline: 19980506

AB Within the scope of the investigation of drug metabolism in keratinocytes solid phase **microextraction** (**SPME**) was investigated as a suitable method for sample preparation. The application of **SPME** is based on the fact, that a amount of analyte is absorbed by the polymer fiber at equilibrium, and the fiber is localized on a tip of a

GC-syringe.

The stable nitroxyl radical TEMPO (2,2,6,6-tetramethylpiperidine-1-oxyl) and its apolar metabolite 2,2,6,6-tetramethylpiperidine were analyzed by **SPME** and subsequent GC using thymol as internal standard. By means of the headspace-technique and an apolar fiber the recovery rate of TEMPO and the metabolite was nearly 100% and the precision was high. However, the results of the direct **SPME** were unsatisfactory. In comparison with conventional **liquid/liquid** extraction and solid phase extraction SPE the **SPME** proved the best results with regard to recovery rate and precision. Furthermore, the main advantages of **SPME** are the renunciation of organic solvents, the saving of time, the possibility to reuse the fiber about 100-150 times

and

the option for a complete automatisisation of the extraction procedure.

L35 ANSWER 8 OF 87 MEDLINE

ACCESSION NUMBER: 97093937 MEDLINE

DOCUMENT NUMBER: 97093937 PubMed ID: 8939400

TITLE: Comparison of new solid-phase extraction methods for chromatographic identification of drugs in clinical toxicological analysis.

AUTHOR: Degel F

CORPORATE SOURCE: Institut fur Klinische Chemie und Laboratoriumsmedizin, Klinikum Nurnberg Nord, Germany.

SOURCE: CLINICAL BIOCHEMISTRY, (1996 Dec) 29 (6) 529-40.  
Journal code: 0133660. ISSN: 0009-9120.

PUB. COUNTRY: United States

DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)

LANGUAGE: English

FILE SEGMENT: Priority Journals

ENTRY MONTH: 199702

ENTRY DATE: Entered STN: 19970305

Last Updated on STN: 19980206

Entered Medline: 19970220

AB OBJECTIVES: Newly presented solid-phase extraction methods (Solid Phase Disc Extraction, SPEC-Plus, Multi-Modal, and Solid Phase **Micro Extraction**, **SPME** have been checked with respect to their applicability to clinical toxicological analysis. In comparison with conventional **liquid/liquid**-extraction and a common mixed-phase column technology, their use in general screening and selective extraction methodology is discussed. DESIGN AND METHODS: Recovery studies were performed with urine-based samples including model substances, as well as drugs and metabolites from native urine samples. Chromatographic performance of the resulting extracts is presented in

some

examples. RESULTS: **Liquid/liquid** extraction, common mixed-phase column technique and the new SPEC-Plus, Multi-Modal disc

for the compliance monitoring. The recoveries of phthalates, polycyclic arom. hydrocarbons (PAH's), and most of the org. pesticides, which have very hydrophobic nature and high b.ps., are very acceptable. Consequently GC/MS anal. using solid phase extn. (SPE) techniques can be applied as the primary anal. method and final confirmation tool for the routine monitoring samples such as groundwater, surface water and reclaimed water for the detn. of trace org. pollutants with improved sensitivity, reduced extn. time and monitoring expense.

L35 ANSWER 26 OF 87 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1998:155555 CAPLUS  
DOCUMENT NUMBER: 128:158593  
TITLE: Determination of endosulfan and some pyrethroids in waters by micro **liquid-liquid** extraction and GC-MS  
AUTHOR(S): Fernandez-Gutierrez, A.; Martinez-Vidal, J. L.; Arrebola-Liebanas, F. J.; Gonzalez-Casado, A.; Vilchez, J. L.  
CORPORATE SOURCE: Department Hydrogeology Analytical Chemistry, University Almeria, Almeria, E-04120, Spain  
SOURCE: Fresenius' Journal of Analytical Chemistry (1998), 360(5), 568-572  
CODEN: FJACES; ISSN: 0937-0633  
PUBLISHER: Springer-Verlag  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A simple, rapid and reproducible method for the detn. of some pesticide residues in water was developed using micro **liq.-liq.** extn. and GC-MS with selected ion monitoring. The chlorinated insecticides .alpha.- and .beta.-endosulfan and endosulfan sulfate as well as the synthetic pyrethroids bifenthrin, permethrin, cypermethrin, fenvalerate, and deltamethrin can be sepd. from a 500 mL sample water extd. with 0.5 mL of n-hexane contg. anthracene-d10 internal std. without clean-up in only 13 min. The recovery efficiencies of the tested compds. yielded >93.0% at a fortification level of 5 ng/mL and their RSD were between 1.9 and 11.7%. Detection limit of each compd. ranged between 3 and 35 pg/mL. The method was applied to ground-, sea- and tap waters from Almeria (Spain). The solubilities in water at 20.degree. were detd.

L36 ANSWER 27 OF 87 CAPLUS COPYRIGHT 2002 ACS  
ACCESSION NUMBER: 1997:811662 CAPLUS  
DOCUMENT NUMBER: 128:98868  
TITLE: **Microextraction** procedures combined with large volume injection in capillary gas chromatography for the determination of pesticide residues in environmental aqueous samples  
AUTHOR(S): Beltran, J.; Lopez, F. J.; Forcada, M.; Hernandez, F.  
CORPORATE SOURCE: Analytical Chemistry, Department of Experimental Sciences, University Jaume I, P.O. Box, E-12080 Castellon, 224, Spain  
SOURCE: Analytica Chimica Acta (1997), 356(2-3), 125-133  
CODEN: ACACAM; ISSN: 0003-2670  
PUBLISHER: Elsevier Science B.V.  
DOCUMENT TYPE: Journal

SOURCE: Rivista Italiana EPPoS (1997), (Spec. Num.,  
15th Journees Internationales Huiles Essentielles,  
1996), 355-362  
CODEN: RIEPD7; ISSN: 0392-0445

PUBLISHER: Rivista Italiana EPPoS

DOCUMENT TYPE: Journal

LANGUAGE: French

AB Differentiation between synthetic or natural origin of flavor compds. use chromatog. chiral anal. and/or GC/IRMS. A study in the complex matrix (aroma exts., foods) implies a preliminary extn. step without any change of chiral and isotopic characteristics. Three techniques (**liq./liq.** extn., simultaneous distn. extn. and solid-phase **microextn.**) were tested to study an eventual racemization of chiral mols. and/or isotopic discrimination in fruit flavor compds.

L35 ANSWER 30 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:670255 CAPLUS

DOCUMENT NUMBER: 127:336342

TITLE: Determination of acrinathrin in water samples by micro **liquid-liquid** extraction and gas chromatography-mass spectrometry

AUTHOR(S): Vilchez, Jose Luis; Espinosa, Pedro; Arrebola, F. Javier; Gonzalez-Casado, Antonio

CORPORATE SOURCE: Department of Analytical Chemistry, University of Granada, Granada, E-18071, Spain

SOURCE: Analytical Sciences (1997), 13(5), 817-819  
CODEN: ANSCEN; ISSN: 0910-6340

PUBLISHER: Japan Society for Analytical Chemistry

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method for detg. acrinathrin, an insecticide, in seawater and groundwater is proposed. The method is based on a hexane micro **liq.-liq.** extn. which is used in the detn. of pyrethroids and endosulfans in water.

L35 ANSWER 31 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:533355 CAPLUS

DOCUMENT NUMBER: 127:219696

TITLE: Development of a **liquid-liquid (micro) extraction** method for online monitoring of lead

AUTHOR(S): Luque-Perez, E.; Rios, A.; Valcarcel, M.

CORPORATE SOURCE: Dep. Anal. Chem., Fac. Sci., Univ. Cordoba, Cordoba, E-14004, Spain

SOURCE: Quimica Analitica (Barcelona) (1997), 16(2), 107-112  
CODEN: QUANEL; ISSN: 0212-0569

PUBLISHER: Elsevier Prensa

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A **liq.-liq. (micro)extn.** procedure was developed for the continuous monitoring of lead. The method is based on the photometric detn. of lead with dithizone in carbon tetrachloride. The extn. process was performed in a miniaturized way by placing a small plug of the org. solvent contg. the dithizone at the detection point. Then a large aq. sample vol. was passed through the org. plug which was gradually enriched with the analyte. This arrangement allowed the continuous monitoring of lead in samples with a controlled pre-concn. Linear calibration ranges between 25-500 ng mL<sup>-1</sup> and 0.5-5 .mu.g mL<sup>-1</sup> were

obtained, with relative std. deviations of 4-5% and a throughput of 10 samples h<sup>-1</sup>. The method was applied to the anal. of liq. in canned food samples.

L35 ANSWER 32 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:515814 CAPLUS  
DOCUMENT NUMBER: 127:130207  
TITLE: Environmental sample treatment: evolution and perspectives  
AUTHOR(S): Pichon, V.  
CORPORATE SOURCE: Laboratoire Environnement et Chimie Analytique, CNRS, Paris, 75231, Fr.  
SOURCE: Analisis (1997), 25(4), 101-106  
CODEN: ANLSCY; ISSN: 0365-4877  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: French

AB A review with 30 refs.; most environmental samples cannot be directly analyzed without a previous sample pre-treatment because of the required low concn. levels and the complexity of the matrixes which we have to deal

with (waters, soils, sediments, sludge, etc.). This sample pre-treatment has to be simple, fast, cost-effective, easy for automation in order to limit the risk of losses and of contamination and to gain in reproducibility. During a long time, any sample pre-treatment methods such as **liq.-liq.** extn. for water samples or Soxhlet extn. for soils and sediments have been used with the drawback of using large amts. of org. solvents. Due to more and more drastic environmental regulations, **liq.-liq.** extn. is now replaced by solid-phase extn. which is furthermore an efficient technique, considering

the variety of com. available sorbents. Nowadays, new solid-phase extn. sorbents are being developed such as molecularly imprinted polymers or immunosorbents which are used to selectively ext. the target analytes. Derived from solid-phase extn., the solid-phase **microextn.** (**SPME**) allows also to obtain very interesting results. For solid matrixes, recent techniques allow to minimize the use of org. solvents and

can be easily automated to gain time and reproducibility. For instance, supercrit. fluid extn. (SFE) is an all but solvent-free technique and other techniques, which consume far less org. solvent, can have their efficiency ensured and increased by the use of microwaves (MASE), ultrasound or high temps. and pressures in order to keep the solvent in its liq. state (ASE).

L35 ANSWER 33 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:485715 CAPLUS  
TITLE: Comparison of extraction methods of volatile aroma compounds in processed grapefruit juice  
AUTHOR(S): Jella, P.; Rouseff, R.  
CORPORATE SOURCE: Citrus Research and Education Center, Lake Alfred, FL, 33850, USA  
SOURCE: Book of Abstracts, 214th ACS National Meeting, Las Vegas, NV, September 7-11 (1997), AGFD-078.  
American Chemical Society: Washington, D. C.  
CODEN: 64RNAO  
DOCUMENT TYPE: Conference; Meeting Abstract  
LANGUAGE: English

AB Isolation of flavor volatiles is the most important and limiting step in

food aroma anal. The purpose of this study was to compare four methods of extg. the flavor volatiles from grapefruit juice. High resolu. capillary GC with a DB-5 column was used to evaluate exts. from **liq.-liq.**, L/L, (pentane: ether, 1:1), static headspace solid phase (polydimethylsiloxane divinylbenzene) **micro extn.**, **SPME**, dynamic headspace anal. using a Tenax/charcoal trap with solvent elution and static vacuum simultaneous distn. extn., from a single juice. The pentane-ether ext. produced the best balance of top notes, terpenes and sesquiterpenes. Dynamic headspace extd. primarily top note volatiles. **SPME** exts. contained small amts. of top note volatiles than terpenes and related oxygen analogs. Relative ease of sample prepn., prepn. time and quant. precision for the four methods will be compared.

L35 ANSWER 34 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:479059 CAPLUS

DOCUMENT NUMBER: 127:166424

TITLE: Gas-chromatographic determination of polychlorinated biphenyls in water after headspace solid-phase **microextraction**

AUTHOR(S): Koch, Jurgén; Volker, Peter

CORPORATE SOURCE: Zentrallabor, Hamburger Wasserwerke G.m.b.H., Hamburg,

D-20539, Germany

SOURCE: Acta Hydrochimica et Hydrobiologica (1997), 25(4), 179-190

CODEN: AHCBAU; ISSN: 0323-4320

PUBLISHER: Wiley-VCH

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Headspace-anal. techniques are usually applied to the detn. of easily volatile substances in water, whereas semivolatiles are generally isolated

by **liq.-liq.** or solid-phase extn. A method is presented for isolating high boiling polychlorinated biphenyls (PCB) using

headspace solid-phase **microextn.** at elevated temps. In spite of their low vapor pressure, the analytes were adsorbed very efficiently on a

poly(dimethylsiloxane)-coated fiber. In combination with GC/ECD, a very simple and sensitive solventless detn. of PCB was accomplished. Using the

simplest possible std. conditions, limits of detn. in the lowest ng/L range were achieved. Further increased sensitivity down to the parts per quadrillion range was possible by stirring and increasing the sample vol. and adsorption time. Moderate matrix effects were obsd. in some surface water and groundwater.

L35 ANSWER 35 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:393986 CAPLUS

DOCUMENT NUMBER: 127:55520

TITLE: Determination of triazine herbicides by capillary gas chromatography with large-volume on-column injection

AUTHOR(S): Beltran, J.; Lopez, F. J.; Forcada, M.; Hernandez, F.  
CORPORATE SOURCE: Dep. Experimental Sciences, Univ. Jaume, Castellon, E-12080, Spain

SOURCE: Chromatographia (1997), 44(5/6), 274-278

CODEN: CHRGB7; ISSN: 0009-5893

PUBLISHER: Vieweg  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The potential of large-vol. on-column injection to det. triazine herbicides in clean water samples (groundwater) was studied. The sensitivity of chromatog. detn. was increased by 2 orders of magnitude by injecting .ltoreq.200 .mu.L of pesticide solns. and N-P detection. Anal. characteristics expressed as precision, linear range, and detection limit were detd.; results indicated adequate anal. performance and the ruggedness of the injection technique. As an application, gas chromatog. with large-vol. on-column injection and N-P detection was combined with off-line liq.-liq. microextn. with hexane (1 mL water/1 mL hexane). The procedure was applied to spiked groundwater samples at 2 concns. (1 and 10 .mu.g/L) with good recoveries (81-103%, except for deethylatrazine) and repeatability (>15% at the 1 .mu.g/L level). Detection limits for triazine herbicides studied were 0.08-0.16 .mu.g/L.

L35 ANSWER 36 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:364373 CAPLUS  
DOCUMENT NUMBER: 127:64657  
TITLE: Instrumental analysis of volatile (flavor) compounds in milk and dairy products  
AUTHOR(S): Mariaca, R.; Bosset, J. O.  
CORPORATE SOURCE: Federal Dairy Research Institute/FAM, Liebefeld-Bern, CH-3097, Switz.  
SOURCE: Lait (1997), 77(1), 13-40  
CODEN: LAITAG; ISSN: 0023-7302  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review with 179 refs. The present article reviews the most commonly used methods, techniques, and equipment for instrumental anal. of volatile (flavor) compds. in milk and dairy products. After listing some previous important review articles, several methods commonly used for sample treatment are described, as well as the following techniques for extn. and concn. prior to gas chromatog. (GC) anal.: static and dynamic headspace, steam distn., high-vacuum distn., mol. distn., direct extn. (liq ./liq. or liq./solid), supercrit. fluid extn. (SFE), simultaneous (steam) distn. extn. (SDE), dialysis, solid-phase extn. (SPE) and solid-phase microextn. (SPME). Two classical injection devices are also described: on-column injection and the so-called "purge and trap" system. The main advantages and disadvantages of current com. available types of fused silica capillary columns are briefly considered. The newly developed "chiral" phases are also described. The article reviews some of the numerous detection systems used for qual. and/or quant. analyses such as FID or MS detection, FTIR detection, SCD, FPD and NPD detectors used for sulfur- and nitrogen-contg. components, AED detection and the "sniffing device". Some useful library search systems such as PBM, INCOSTM and SISCOM (ie, MassLib .RTM.) are mentioned to complete the overview of this topic. Finally, this paper briefly points out some other methods (ie, photometric), capable of detg. various specific chem. functions responsible for flavor (carbonyl compds., etc), as well as promising techniques involving new electronic noses.

L35 ANSWER 37 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:259160 CAPLUS  
DOCUMENT NUMBER: 126:308569  
TITLE: Matrix effects on solid-phase **microextraction** of organophosphorus pesticides from water  
AUTHOR(S): Valor, I.; Molto, J. C.; Apraiz, D.; Font, G.  
CORPORATE SOURCE: LABAQUA S.A, C/Alona 33, Alicante, 03007, Spain  
SOURCE: Journal of Chromatography, A (1997), 767(1 + 2), 195-203  
CODEN: JCRAEY; ISSN: 0021-9673  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB This study develops a method for solid-phase **microextn.** ( **SPME**) of eight organophosphorus pesticides, diazinon, fenthion, fenitrothion (sumithion), methylparathion, parathion, methyltrithion, ethion and triazophos, from water. Detn. is carried out by gas chromatog. with nitrogen-phosphorus detection. To perform the **SPME**, poly(dimethylsiloxane) and polyacrylate fibers were initially compared on the basis of their absorption capacities for the selected pesticides, and polyacrylate was selected to accomplish the rest of assays. The main factors affecting the **SPME** process such as memory effect, stirring rate, extn. temp. and absorption-time profile were studied. The proposed method requires 2 mL of sample and reaches limits of detection ranging between 6 ng/L for fenthion and 136 ng/L for methyl-parathion, with relative std. deviations at the 500 ng/L level between 2 for diazinon and 13 for ethion. The method was applied to spiked tapwater, seawater, wastewater with high dissolved org. matter content (DOC = 212 mg/L) and water contg. 15 mg/L of sodium lauryl sulfate (SDS), which were previously analyzed to control interferences. Recoveries for diazinon, fenthion and methyl-trithion were better from seawater than from Milli-Q water. Recoveries for fenthion and ethion increased with the presence of SDS and those for methyl-parathion and triazophos decreased from the wastewater because of the presence of the org. matter. Finally, a wastewater from a pesticide producer industry was analyzed showing the presence of diazinon and ethion at concns. of 0.97 .mu.g/L and 0.67 .mu.g/L, resp. Results were in concordance with those obtained using a std. **liq.-liq.** extn. method.

L35 ANSWER 38 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:258903 CAPLUS  
DOCUMENT NUMBER: 126:265378  
TITLE: Recent progress in sugar colorants  
AUTHOR(S): Godshall, Mary An  
CORPORATE SOURCE: Sugar Processing Research Institute, Inc., New Orleans, LA, USA  
SOURCE: Proceedings of the Sugar Processing Research Conference (1996) 262-305  
CODEN: PSPCE4; ISSN: 0730-6490  
PUBLISHER: Sugar Processing Research Institute  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The study of color and color precursors in cane and beet sugar has been an important research area for many years. Previous studies on isolating colorant precursors had relied on various **liq.-liq.** extn. procedures, methods that require large amts. of sample and solvent



and that are time consuming. In this paper, several procedures are described for isolating sugar colorants that rely on **micro-extn.** methods, some using as little as 3 g of sample and only a few ml of solvent. Four methods were compared: **Micro-extn.** cartridges contg. either anion exchange resin or C-18, Empore-SDB membranes, XAD-16 macroporous resin, methanol/ethyl acetate extn. Colorants and colorant precursors in raw sugars from various sources were examd. by gas chromatog. and mass spectrometry. The presence of fructose anhydrides and a dimer of 5-hydroxymethylfurfural (HMF) is reported in both cane and beet colorant exts.

L35 ANSWER 39 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:251063 CAPLUS  
DOCUMENT NUMBER: 126:242428  
TITLE: Determination of Chemical Warfare Agents in Natural Water Samples by Solid-Phase **Microextraction**  
AUTHOR(S): Lakso, Hansaake; Ng, Wei Fang  
CORPORATE SOURCE: Division of NBC-Defence FOA, Swedish Defence Research Establishment, Ume, S-90182, Swed.  
SOURCE: Analytical Chemistry (1997), 69(10), 1866-1872  
CODEN: ANCHAM; ISSN: 0003-2700  
PUBLISHER: American Chemical Society  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB An anal. technique was developed for detection of nerve agents in natural water samples at ppb and sub-ppb (vol./vol.) levels with GC-SIM and GC-NPD. Four different types of fibers for solid-phase **microextn.** (**SPME**) were evaluated, and a method was optimized with respect to sampling time and conditions. It was found that the 65 .mu.m copoly(dimethylsiloxane/divinylbenzene) fiber was the best choice for extn. of the nerve agents. The precision, linear range, and detection limit were investigated. Tap water, river water, seawater, and wastewater were spiked with 60 ppb (vol./vol.) of nerve agents, and the samples were monitored for 1 wk. This investigation shows that the **SPME** method is comparable to **liq.-liq.** extn. and has considerable potential for on-site inspections under the Chem. Weapons Convention.

L35 ANSWER 40 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:144187 CAPLUS  
DOCUMENT NUMBER: 126:158976  
TITLE: Recent progress in sugar colorants: GC-MS studies and extraction techniques  
AUTHOR(S): Godshall, Ma  
CORPORATE SOURCE: Sugar Processing Research Institute, Inc., New Orleans, LA, 70124, USA  
SOURCE: Proceedings of the Annual Congress - South African Sugar Technologists' Association (1996), 70th, 153-161  
CODEN: PSATAA; ISSN: 0373-045X  
PUBLISHER: South African Sugar Technologists' Association  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Four methods were examd. for the identification of raw sugar colorants: **micro-extn.** cartridges contg. either strong anion exchange resin (SAX) or C-18, Empore-SDB membranes, **liq.-liq.** extn., and methanol/ethyl acetate extn. of cryst. raw sugar.

Of these methods, SAX and methanol/ethyl acetate gave the most useful information. Colorants and colorant precursors in raw sugars from various

sources were examd. by gas chromatog. and mass spectrometry. Phenolic acids as well as sugar degrdn. products were obsd.

L35 ANSWER 41 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1997:60849 CAPLUS

DOCUMENT NUMBER: 126:64967

TITLE: Solid Phase **Microextraction** for Determining the Distribution of Chemicals in Aqueous Matrixes

AUTHOR(S): Poerschmann, Juergen; Zhang, Zhouyao; Kopinke, Frank-Dieter; Pawliszyn, Janusz

CORPORATE SOURCE: Department of Chemistry, University of Waterloo, Waterloo, ON, 2L 3G1, Can.

SOURCE: Analytical Chemistry (1997), 69(4), 597-600

CODEN: ANCHAM; ISSN: 0003-2700

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Solid phase **microextn.** (**SPME**) can be applied to measure the distribution of chems. in different speciation states. The std. **SPME** app. and procedures can be applied to measure free concns. of a target compd. spiked into pure water and spiked into water contg. another pseudophase, such as dissolved humic org. matter (HOM). Based on a comparison of results obtained for the 2 samples, the partitioning of the target analyte between water and the pseudophase is calcd. The samples in this study were from heavily contaminated coal wastewater contg. dissolved org. polymers with properties similar to those of HOM. After calibration of the **SPME** signal by addn. of an internal std. (e.g., a deuterated surrogate), the results indicate the total concn. of the target analyte in the sample due to the identical partitioning of the internal std. The concn. detd. in this way coincides well with data obtained from **liq.-liq. extn.** (**LLE**). Both methods, **SPME** with internal calibration and **LLE**, measure total concn., composed of a freely dissolved portion and a portion that is reversibly bound onto a pseudophase (HOM).

L35 ANSWER 42 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:714466 CAPLUS

DOCUMENT NUMBER: 126:6620

TITLE: Modern analyses and binding studies of flavor volatiles with particular reference to dairy protein products

AUTHOR(S): Stevenson, R. J.; Chen, X. D.; Mills, O. E.

CORPORATE SOURCE: Department Chemical and Materials Engineering, University Auckland, Auckland, N. Z.

SOURCE: Food Research International (1996), 29(3-4), 265-290

CODEN: FORIEU; ISSN: 0963-9969

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 341 refs. Various techniques are used to sep. and isolate mixts. of volatile flavor compds. from sample matrixes. These include headspace sampling (static and dynamic), distn. followed by **liq.-liq. extn.**, simultaneous distn.-extn., solid-phase extn. and new methods of extn. such as solid-phase **microextn.** and membrane-based systems. After clean-up and concn., most mixts. of

volatiles are sepd. and analyzed in gas chromatographs using open-tubular columns. Gas chromatog. injection techniques, columns and detectors are discussed. Mass spectrometry coupled with gas chromatog. is a major method used to identify volatile flavor compds. Establishment of the real flavor profiles perceived by humans is discussed with ref. to some appropriate expts. Volatiles can be lost from foodstuffs by oxidn., polymn., reactions with other components in the foodstuff and evapn. Effective binding of flavor constituents is important during storage and transportation of foodstuffs. On the other hand, the release of off-flavors from a foodstuff is desirable before consumption or formulation with other foodstuffs. Binding expts. discussed include those in liq. systems, desiccation expts. with dry foods and microencapsulation.

L35 ANSWER 43 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:712767 CAPLUS

DOCUMENT NUMBER: 126:64972

TITLE: **Microextraction** of chlorinated benzenes and selected organochlorines from environmental water  
AUTHOR(S): Samson, C.; Mallet, V. N.; Doull, J.; Brun, G.  
CORPORATE SOURCE: Chem. Biochem. Dep., Univ. Moncton, Moncton, NB, E1A 3E9, Can.

SOURCE: International Journal of Environmental Analytical Chemistry (1996), 64(2), 111-121  
CODEN: IJEAA3; ISSN: 0306-7319

PUBLISHER: Gordon & Breach

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The extn. of chlorinated benzenes (CBs) and org. chlorocarbons (OCs) from water using only a few milliliters of solvent was studied. N-hexane vol. vs. time of extn. was studied as a parameter. Several alternatives to

the analyst, i.e., smaller vol.-longer time or larger vol.-shorter time are revealed. Good recoveries were achieved with 5 mL of n-hexane in a

single step 10-min extn. of a 1-L water sample, but more consistent results were obtained with environmental water with 2 successive extns. using 2 mL of solvent and a few drops of acetone to reduce emulsions. Av. recoveries

of 83.29 and 87.75% were obtained for CBs and OCs, resp., in a multi-residue anal. of environmental water comprising 22 components at the 0.01-0.25

ppb level. The **microextn.** approach looks promising as an alternative to the traditional **liq.-liq.** extn. approach for the anal. of CBs and OCs from environmental water. Recoveries are better for volatile analytes such as low mol.-wt. chlorobenzenes because the evapn. step is eliminated. Precision of the data for individual congeners is also better.

L35 ANSWER 44 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:507809 CAPLUS

DOCUMENT NUMBER: 125:264596

TITLE: Automatic determination of total aliphatic amines by online photometric **liquid-liquid microextraction**

AUTHOR(S): Fernandez, J. M. Lopez; Rios, A.; Valcarcel, M.  
CORPORATE SOURCE: Dep. Anal. Chem., Univ. Cordoba, Cordoba, E-14004, Spain

SOURCE: Fresenius' Journal of Analytical Chemistry (1996), 356(1), 49-51  
 CODEN: FJACES; ISSN: 0937-0633

PUBLISHER: Springer  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB An automatic flow method for the detn. of total aliph. amines was developed. Using an integrated **micro extn.** unit at the detection point that allows continuous online monitoring of small org. plug from which amines are extd. It is based on the formation of ion-pairs between aliph. amines and sodium 1,2-naphthoquinone-4-sulfonate that are subsequent extd. into chloroform. The gradual enrichment of the org. phase with the ion-pair is continuously monitored at 460 nm. Absorbance readings at a fixed time and the slopes of absorbance-time recordings are the measured parameters used for detn. purposes. The proposed method was applied to the detn. of total aliph. amines in both synthetic and real (food) samples.

L35 ANSWER 45 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:465278 CAPLUS  
 DOCUMENT NUMBER: 125:143851

TITLE: Extension of the Flory-Huggins theory to study incompatible polymer blends in solution from phase separation data

AUTHOR(S): Campos, Agustin; Gomez, Clara M.; Garcia, Rosa; Figueruelo, Juan E.; Soria, Vicente

CORPORATE SOURCE: Dep. Quimica Fisica, Univ. Valencia, Valencia, E-46100, Spain

SOURCE: Polymer (1996), 37(15), 3361-3372  
 CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB A method is presented to evaluate the Koningsveld g-functions for quasi-ternary polymer solns. and blends, involving binary and ternary interactions. A robust set of 12 equations derived from the Flory-Huggins lattice theory, dealing with **liq.-liq.** phase-sepn. conditions, has been solved using as input data the exptl. vol. fractions of each component in each coexisting phase. These values were found by means of a liq. **microextn.** procedure followed by size-exclusion chromatog. Several approxns. are proposed and discussed in order to select the best option to predict thermodyn. properties of binary polymer blends and blends in soln. The dimethylformamide/poly(vinylidene fluoride)/polystyrene ternary soln. was chosen to test the validity of our proposal. In general, the anal. form of the g-function is adequately described by a second-order polynomial, the inclusion of the ternary interaction parameter also being recommended. From the values of the PVDF/PS interaction function, it can be inferred that this blend behaves as slightly incompatible under environmental conditions, in clear agreement with data previously reported. In contrast, the incompatibility is suppressed when a low-molar-mass component, such as DMF, is added, reaching the semidilute regime (total polymer vol. fraction .vphi.p .apprxeq. 0.35). Values of the Gibbs free energy of mixing as a function of the blend compn. were also evaluated for both ternary soln. and dry blend and discussed in terms of their stability.

L35 ANSWER 46 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:453809 CAPLUS  
DOCUMENT NUMBER: 125:95301  
TITLE: Solid-phase **microextraction** of VOCs in water  
AUTHOR(S): Pratt, Katie; Shirey, Robert; Mani, Venkatachalam  
CORPORATE SOURCE: Supelco, Mississauga, ON, L4W5H5, Can.  
SOURCE: ASTM Special Technical Publication (1996),  
STP 1261(Volatile Organic Compounds in the  
Environment), 139-146  
CODEN: ASTTA8; ISSN: 0066-0558  
PUBLISHER: American Society for Testing and Materials  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The sample prepn. in the anal. of aq. samples has been achieved by solid phase **microextn.** (**SPME**). This method is inexpensive, solventless, portable and automatable. **SPME** has several advantages over conventional **liq.-liq. extn.** **SPME** is a quant. technique for volatile and semivolatile compds. from gaseous and liq. samples. The quantification by **SPME** is linear over 4 orders of magnitude. As this method can reach a detection limit of 15 ppt for several compds. and can be easily automated, the anal. of volatile org. compds. (VOCs) in the environment, in particular, water samples, is highly advantageous by this method. This study describes the anal. of volatile orgs., BTEX, and halogenated orgs. in water. The lowest limit of detection, linearity, and other parameters is discussed. The anal. of a soil sample taken near an oil storage tank for VOCs by **SPME** is described. A comparison between different fibers (different types of coating materials and film thickness) using different columns is described.

L35 ANSWER 47 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:436268 CAPLUS  
DOCUMENT NUMBER: 125:95274  
TITLE: Simultaneous determination of 60 pesticides in water using solid-phase **microextraction** and gas chromatography-mass spectrometry  
AUTHOR(S): Boyd-Boland, Anna A.; Magdic, Sonia; Bawliszyn, Janusz  
CORPORATE SOURCE: B.  
Dep. Chem., Univ. Waterloo, Waterloo, ON, N2L 3G1, Can.  
SOURCE: Analyst (Cambridge, United Kingdom) (1996), 121(7), 929-938  
CODEN: ANALAO; ISSN: 0003-2654  
PUBLISHER: Royal Society of Chemistry  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A new method for simultaneous detn. of 60 pesticides by solid-phase **microextn.** and gas chromatog.-mass spectrometry is presented. The analyte mixt. contains representatives from each of the organonitrogen, organochlorine and organophosphorus classes. Both polyacrylate- and polydimethylsiloxane-coated fibers are used to ext. the analytes directly from the samples over the concn. range 0.1-100 .mu.g L-1. The performances of the two types of coating were compared. The limits of detection with both coatings were detd. to be at the ng/L to sub-ng/L levels, depending on the selectivity of the coating for an analyte. The method was applied to the anal. of samples obtained from the Russian and Canadian Arctic. A contaminated groundwater sample and a contaminated

soil sample, both contg. metolachlor, were analyzed by the proposed method

and the results were found to be comparable to those obtained by a **liq.-liq.** extn. method. Orange juice was spiked with the 60 pesticides and their recoveries were detd.

L35 ANSWER 48 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:358420 CAPLUS

DOCUMENT NUMBER: 125:66848

TITLE: Online determination of organochlorine pesticides in water by solid-phase **microextraction** and gas chromatography with electron capture detection

AUTHOR(S): Young, Richard; Lopez-Avila, Viorica; Beckert, Werner F.

CORPORATE SOURCE: California Operations, Midwest Research Institute, Mountain View, CA, 94043, USA

SOURCE: Journal of High Resolution Chromatography (1996), 19(5), 247-256

CODEN: JHRCE7; ISSN: 0935-6304

PUBLISHER: Huethig

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The extn. of 20 organochlorine pesticides (OCPs) from water samples by solid-phase **microextn.** (**SPME**) is described. Three fused-silica fibers coated or bonded with polydimethylsiloxane (PDMS) of different film thicknesses (20, 30, and 100 .mu.m) were evaluated. The extn. time, the effects of stirring and addn. of NaCl to the aq. sample, the linear range and the precision of this technique, and the effect of carry-over were examd. for 20 analytes. A comparison with results using conventional **liq.-liq.** extn. demonstrate that the **SPME** technique is well suited as a fast screening technique for OCPs in water samples.

L35 ANSWER 49 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:279806 CAPLUS

DOCUMENT NUMBER: 124:341151

TITLE: New and efficient **microextraction** /solid-phase extraction method for the gas chromatographic analysis of wine volatiles

AUTHOR(S): Ferreira, Vicente; Sharman, Matthew; Cacho, Juan F.; Dennis, John

CORPORATE SOURCE: Department of Analytical Chemistry, Faculty of Sciences University of Zaragoza, Zaragoza, 50009, Spain

SOURCE: J. Chromatogr., A (1996), 731(1 + 2), 247-59

CODEN: JCRAEY; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new method for analyzing wine volatiles has been developed. The main features of the proposed method are (1) the minimal use of solvents to reduce overall anal. time and (2) the use of a silica solid-phase extn. cartridge to selectively sep. the wine volatiles into two fractions prior to quant. measurement by gas chromatog. In this method a wine sample is first adjusted to 13% alc. (vol./vol.). An alc. fraction contg. the majority of the volatile compds. is then obtained by salting-out the wine.

Wine volatiles present in this fraction are **micro-extd** . by a **liq.-liq.** partition with 1,1,2-trichlorotrifluoroethane (freon 113). This freon ext. is then applied onto a silica solid-phase extn. cartridge to selectively obtain two

fractions that are directly injected into the gas chromatograph.  
Repeatability of the method is better than 5% (as R.S.D.) for more than  
50 wine volatiles. Linearity was studied for all 50 compds., and was  
satisfactory in most cases. Recovery of volatiles was checked by the  
anal. of spiked samples, and was also satisfactory. Detection limits  
with flame ionization detection (FID) are below 1 mg/L for the best extd.  
compds.

L35 ANSWER 50 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:225503 CAPLUS  
DOCUMENT NUMBER: 124:341190  
TITLE: Aroma analysis for the culture of fruit and  
vegetables  
AUTHOR(S): Ulrich, D.; Hoberg, E.  
CORPORATE SOURCE: Institut fur Qualitätsanalytik, Bundesanstalt fur  
Zuchtforschung Kulturpflanzen Quedlinburg,  
Quedlinburg, 06484, Germany  
SOURCE: Geschmacksstoffe Pflanz. Nahrungsm. - Dtsch. Ges.  
Qualitätsforsch., 30th (1995), 76-90.  
Deutsche Gesellschaft fuer Qualitätsforschung:  
Freising, Germany.  
CODEN: 62OZAV  
DOCUMENT TYPE: Conference  
LANGUAGE: English

AB Anal. methods for fruits and vegetables were developed and exemplified by  
anal. of strawberries. Ten sensory and 36 instrumental anal. parameters  
were detd. on 28 varieties of wild and cultivated strawberries. Beside  
classic Brix and dry matter analyses, sugar and fruit acid profiles were  
detd. by HPLC and the concns. of 23 aroma compds. were detd. by  
**liq.-liq.** extn. and gas chromatog. This can be used as  
an extensive data base of strawberry flavor precursors in the development  
of rapid anal. methods. As a rapid method for the qual. and, for a few  
major components, quant. anal., samples were successfully prepd. by  
solid-phase **microextn.**

L35 ANSWER 51 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:223315 CAPLUS  
DOCUMENT NUMBER: 124:253237  
TITLE: Extraction of pesticides from aqueous samples: a  
comparative study.  
AUTHOR(S): Saenz Barrio, Cecilia; Romero Melgosa, Elena; Sanz  
Asensio, Jesus; Galban Bernal, Javier  
CORPORATE SOURCE: Dep. Chem., Analytical Chem., Univ. La Rioja,  
Logrono,  
E-26001, Spain  
SOURCE: Mikrochim. Acta (1996), 122(3-4), 267-77  
CODEN: MIACAQ; ISSN: 0026-3672  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Three extn. procedures for 8 pesticides (chlorfenvinphos, diazinon, ethyl  
parathion, ethiofencarb, fenitrothion, malathion, metalaxyl, pirimicarb)  
in water samples are compared. The extn. procedures are: **liq.-**  
**liq.** extn. (**LLE**), solid-phase extn. (**SPE**) and  
**microextn.** (**ME**). For each procedure the most suitable conditions  
were obtained exptl. With **ME**, the effects of different mixts. of Kaltron  
with other solvents were tested. A preconcn. factor (**PF**) was used to

rank the methods: the best results were obsd. for **ME** (**PF** 15-45, whereas **PF** <

for SPE, and PF .ltoreq. 13 for **LLE**). In all cases, the detn. was performed by gas chromatog., using a nitrogen phosphorus detector and the internal std. method (methyl parathion) as the quantification procedure.

L35 ANSWER 52 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:203422 CAPLUS

DOCUMENT NUMBER: 124:252820

TITLE: Preconcentration and determination of Sn- and Pb-organic species in environmental samples by **SPME** and GC-AED

AUTHOR(S): Tutschku, S.; Mothes, S.; Wennrich, R.

CORPORATE SOURCE: Dep. Analytical Chem., Centre Environmental Research, Leipzig, D-04318, Germany

SOURCE: Fresenius' J. Anal. Chem. (1996), 354(5-6), 587-91

CODEN: FJACES; ISSN: 0937-0633

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A new sample prepn. and preconcn. technique - solid phase **microextn.** (**SPME**) - is reported for the application of several organotin compds. and tetraethyllead in aq. samples. The solvent-free procedure is rapid in comparison with **liq.**-**liq.** extn. or SFE but also sensitive. Anal. variables of the extn. such as adsorption and desorption time, stirring rate and temp.

were

investigated. The detn. was performed by GC coupled with at. emission detection (AED). After optimization of the conditions of **SPME** a calibration was realized on the basis of a multicomponent std. soln., prepd. by ethylation of organotin salts directly in the sample using sodium tetraethylborate (NaBEt<sub>4</sub>) without prior sepn. of the analytes from the matrix. The method permits preconcn. Values of about 10 can be reached. A detection limit of 0.09 pg Sn and 0.08 pg Pb can be achieved under optimized conditions. The proposed procedure has been successfully applied to the anal. of organotin compds. in various slurry samples.

L35 ANSWER 53 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:195832 CAPLUS

DOCUMENT NUMBER: 124:269717

TITLE: Determination of 4-nonylphenol - Part 2: orthogonal array design as a chemometric method for the solid-phase **microextraction** of 4-nonylphenol in water

AUTHOR(S): Chee, Kok Kay; Wong, Ming Keong; Lee, Hian Kee

CORPORATE SOURCE: Dep. Chem., National Univ. Singapore, Singapore, 119260, Singapore

SOURCE: J. Microcolumn Sep. (1996), 8(2), 131-6

CODEN: JMSEEJ; ISSN: 1040-7685

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Orthogonal array design (OAD) using two-level OA8(27) matrix was employed for the optimization of solid-phase **microextn.** (**SPME**) conditions for the detn. of 4-nonylphenol (4-NP) in water. The parameters

under consideration for the optimization of **SPME** conditions include: injector port temp., initial oven temp., desorption time, and pH.

The effect of dissolved humic substances on the extn. efficiency of **SPME** for the detn. of 4-NP was also studied. The method is capable of ppb detection limit with a %RSD of 6.5%. Thus, the



**SPME** approach is suitable for anal. detn. of 4-NP in environmental water samples compared to conventional **liq.-liq.** extn. (**LLE**) technique.

L35 ANSWER 54 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:159337 CAPLUS

DOCUMENT NUMBER: 124:210986

TITLE: On the methodology of trace organic determination in water

AUTHOR(S): Revelsky, Igor A.; Golovko, Irina V.; Yashin, Yuri S.;

Yuri Efimov, Igor P.; Zirko, Boris I.; Glazkov, Igor N.; Revelsky, Alexander I.; Vulikh, Paul P.; Zolotov,

A.

CORPORATE SOURCE: Dept. Chemistry, M.V. Lomonosov Moscow State University, Moscow, 119899, Russia

SOURCE: Anal. Methods Instrum. (**1995**), 2(4), 163-9

CODEN: ANMIEB; ISSN: 1063-5246

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB A review with 152 refs. concerning the methods of trace org. detn. in water, including sample prepn. and sensitive detection, is given. Topics discussed include: sample prepn. methods (**liq.-liq.** extn., solid-phase extn., gas-phase extn., other methods [reverse osmosis, ultrafiltration, solid-phase **micro-extn.**, direct supercrit. fluid extn.], membrane methods and solvent-less solid-phase extn.); and proposed new methods for trace org. detn. in water.

L35 ANSWER 55 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:144500 CAPLUS

DOCUMENT NUMBER: 124:200471

TITLE: The surface activity role in **liquid/liquid microextractions**

AUTHOR(S): Delton, Claudio; Coas, Vanda

CORPORATE SOURCE: U.O. Chimica Fisica Ambientale, S.M.P. USL 8, Arezzo, 52100, Italy

SOURCE: Ind. Bevande (**1996**), 25(141), 17-19

CODEN: INBEEW; ISSN: 0390-0541

DOCUMENT TYPE: Journal

LANGUAGE: Italian

AB The surface discrimination of analytes totally insol. in water (e.g., polycyclic arom. hydrocarbons) makes it possible to recover them with a small amt. of solvent. Such concd. exts. give reliable results under gas chromatog. anal.

L35 ANSWER 56 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:61105 CAPLUS

DOCUMENT NUMBER: 124:184876

TITLE: The application of solid-phase **microextraction (SPME)** for the determination of triazines

AUTHOR(S): Bechmann, Wolfgang; Volkmer, Petra

CORPORATE SOURCE: Inst. Phys. Theor. Chem., Univ. Potsdam, Potsdam, D-14415, Germany

SOURCE: GIT Fachz. Lab. (**1995**), 39(12), 1129-30, 1132-3

CODEN: GITEAR; ISSN: 0016-3538

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Solid microphases coated with poly(dimethylsiloxane) are suitable for the extn. of triazines from groundwater. Comparison with results achieved with **liq.-liq.** extn. proves the applicability of **SPME** (solid-phase **microextn.**) for the detn. of violations of limits for drinking water. **SPME** is a time saving and cost saving alternative to conventional methods of sample prepn.

L35 ANSWER 57 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1996:11122 CAPLUS

DOCUMENT NUMBER: 124:37013

TITLE: A Case History of Contamination by Polychloro-1,3-butadiene Congeners

AUTHOR(S): Botta, D.; Dancelli, E.; Mantica, E.

CORPORATE SOURCE: Department of Industrial Chemistry and Chemical Engineering, Polytechnic of Milan, Milan, 20133, Italy

SOURCE: Environ. Sci. Technol. (1996), 30(2), 453-62

CODEN: ESTHAG; ISSN: 0013-936X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The subject of this paper is a case history of pollution by polychloro-1,3-butadiene congeners, a class of 35 volatile or semivolatile

chlorinated compds. still in the presence of other compds. arising from a different source. By comparison of a sample taken from the bottom fraction of a rectification column for the prodn. of tetrachloroethene with the carbon disulfide ext. of a water sample collected from a well of the municipal water supply of Milan, the source of pollutants was inferred. The extent of pollution was monitored by **liq.-liq. microextn.** of the water of 24 wells sited along the prevailing direction of the movement of the underground water, using hexachloro-1,3-butadiene as a marker.

L35 ANSWER 58 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:992392 CAPLUS

DOCUMENT NUMBER: 124:200420

TITLE: Analysis of strawberry aroma by solid phase **micro extraction**

AUTHOR(S): Ulrich, D.; Eunert, S.; Hoberg, E.; Rapp, A.

CORPORATE SOURCE: Inst. Qualitaetsanal, Bundesanst. Zuechtungsforsch. Kulturpflanz. Quedlinburg, Quedlinburg, D-06484, Germany

SOURCE: Dtsch. Lebensm.-Rundsch. (1995), 91(11), 349-51

CODEN: DLRUAJ; ISSN: 0012-0413

DOCUMENT TYPE: Journal

LANGUAGE: German

AB The concn. profile of aroma components in fresh strawberries was tested by

**liq.-liq.** extn. and solid phase **micro-extn.** In the ext. 150 substances were isolated. Key compd. of strawberry aroma compds. were quantified, esp. butyric and caproic acid. The error of reproducibility for the semi-volatile substances (2-hexenal, Me capronate) was 13-26% and estd. as sufficient for a screening method.

L35 ANSWER 59 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:866088 CAPLUS

DOCUMENT NUMBER: 124:37102

TITLE: The simultaneous determination of cyanogen chloride and cyanogen bromide in chloraminated waters by a

AUTHOR(S): simplified **microextraction** GC/ECD technique  
 Scilimenti, Michael J.; Hwang, Cordelia J.; Speitel,  
 Gerald E. Jr.; Diehl, Alicia C.  
 CORPORATE SOURCE: Water Quality Division, Metropolitan Water District  
 Southern California, La Verne, CA, 91750-3399, USA  
 SOURCE: Proc. - Water Qual. Technol. Conf. (1995),  
 Volume Date 1994, (Pt. 1), 489-507  
 CODEN: PWQCD2; ISSN: 0164-0755  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB This work was undertaken in order to develop an efficient anal. technique  
 for the simultaneous detn. of cyanogen chloride (CNCl) and cyanogen  
 bromide (CNBr), collectively referred to as cyanogen halides (CNXs), and  
 to evaluate their formation from the chloramination of drinking water.  
 CNCl, as a chloramine disinfection byproduct (DBP), will be included in  
 the Federal Information Collection Rule (ICR) and is a possible candidate  
 for regulation in Stage 2 of the Disinfectants/DBP (D/DBP) Rule. In the  
 present work CNBr was found to be a chloramination DBP as well. Current  
 research at Metropolitan has developed a simplified **microextn.**  
 technique for the simultaneous detn. of both CNCl and CNBr in  
 chloraminated waters. The development of this method included evaluation  
 of the effects of variations in salt addn., extn. solvents, extn. time,  
 and chromatog. resoln., as well as identification of a suitable  
 dechlorination/dechloramination agent and acid preservative. The micro-  
**liq./liq.-extn. (LLE)** technique uses a 30-mL  
 sample aliquot (preserved at pH 2.0-3.0) and salted (e.g., with sodium  
 sulfate [Na<sub>2</sub>SO<sub>4</sub>]) Me tert-Bu ether (MtBE) **microextn.**, with sepn.  
 on a capillary gas chromatograph/electron capture detector (GC/ECD).  
 Direct std. comparisons showed that 14 and 86 % of the CNCl and CNBr,  
 resp., are recovered on an abs. basis by the micro-**LLE**  
 technique. Utilizing procedural calibration stds., mean matrix-spike  
 recoveries (± one std. deviation) for CNCl and CNBr were 98.±.6.3 and  
 100 ±.10 %, resp. Aq. (preserved) samples are stable for 17 and 3  
 days, resp.

L35 ANSWER 60 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:862263 CAPLUS  
 DOCUMENT NUMBER: 123:265586  
 TITLE: Fast **microextraction** by demixture for the  
 determination of organochlorine compounds in water  
 AUTHOR(S): Cacho, J.; Salafranca, J.; Ferreira, V.; Nerin, C.  
 CORPORATE SOURCE: Dep. Quim. Anal., Univ. Zaragoza, Zaragoza, 50009,  
 Spain  
 SOURCE: Int. J. Environ. Anal. Chem. (1995), 60(1),  
 23-32  
 CODEN: IJEAA3; ISSN: 0306-7319  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A **microextn.** procedure by demixt. is applied to the detn. of  
 nine chlorobenzene isomers and .alpha., .beta., .gamma. and  
 .delta.-hexachlorocyclohexane isomers in water. The procedure consists  
 of  
 demixing an org. phase (iso-propanol) from a homogeneous aq. soln. contg.  
 the organochlorine compds. by adding 37.7 g of (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub> and 6.85 g of  
 NaH<sub>2</sub>PO<sub>4</sub>.H<sub>2</sub>O. In these conditions 120 .mu.L of iso-propanol are sepd.  
 The  
 recoveries of the compds. are higher than 80% in all cases and the RSD  
 values for independent replicates are less than 6%. The concn. factor of  
 the procedure is about 350. This procedure is compared to both  
**liq.-liq.** and solid-phase C-18 extn. procedures with

excellent results.

L35 ANSWER 61 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:832116 CAPLUS

DOCUMENT NUMBER: 123:283876

TITLE: A comparison of different ways of sample preparation for the determination of phthalic acid esters in water

AUTHOR(S): and plant matrixes  
Holadova, K.; Hajsova, J.

CORPORATE SOURCE: Dep. Food Chemistry and Analysis, Inst. Chemical Technology, Prague, 16628, Czech Rep.

SOURCE: Int. J. Environ. Anal. Chem. (1995), 59(1), 43-57

CODEN: IJEAA3; ISSN: 0306-7319

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Different methods for the isolation of phthalates from water were tested and compared with the aim of evaluating the risk of secondary contamination of samples and to reach good values of recovery for six tested esters (i.e. dimethyl-, diethyl-, di-n-butyl-, benzylbutyl-, bis(2-ethylhexyl)- and di-n-octyl phthalates). Classic liq.-liq. extn. with hexane gave good recoveries for all six esters (70-100%, spiking level 20  $\mu\text{g/L}$ ), but the increased relative std. deviations document problems with cross contamination. Microextn . with isooctane is suitable for the detn. of benzylbutyl-, bis(2-ethylhexyl)- and di-n-octyl phthalates even at low levels of contamination (1  $\mu\text{g/L}$ ) and also for di-Bu phthalate at higher levels (tens of  $\mu\text{g/L}$ ). The detection limits for these esters ranged from

0.01 to 0.05  $\mu\text{g/L}$ . The recovery of more polar phthalates (di-Me, di-Et phthalate) is very low. Solid phase extn. on octadecyl reverse phase

with Et acetate as elution solvent was chosen from a variety of tested systems and can be successfully used for the detn. of dimethyl-, di-Et, di-n-butyl- and benzylbutyl phthalates (recoveries 72-95%, spiking level 20  $\mu\text{g/L}$ ). However, recoveries of bis(2-ethylhexyl)- and di-n-octyl phthalate were not higher than 30%. Detection limits ranged from 0.05 to 0.10  $\mu\text{g/L}$ . A method for the detn. of phthalates in lettuce, using either alumina adsorption column chromatog. or Florisil solid phase extn. as a clean-up step, was developed. Recoveries of all phthalates ranged from 60 to 110% (spiking level 1 mg/kg) and detection limits from 0.01 to 0.05 mg/kg. GC-ECD or GC-MS were used for the identification and quantification of analytes.

L35 ANSWER 62 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:832113 CAPLUS

DOCUMENT NUMBER: 123:237331

TITLE: Microextraction of selected polychlorinated biphenyl congeners and dichlorodiphenyltrichloroethane

s from environmental water and analysis by gas chromatography-electron capture detector

AUTHOR(S): Bourgeois, D. J.; Deveau, Ph.; Mallet, V. N.

CORPORATE SOURCE: Chemistry and Biochemistry Dep., Univ. De Moncton, Moncton, NB, E1A 3E9, Can.

SOURCE: Int. J. Environ. Anal. Chem. (1995), 59(1), 15-24

CODEN: IJEAA3; ISSN: 0306-7319

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A simple **liq.-liq. microextn.** method for polychlorinated biphenyls (PCB), DDT, and related compds. in tap water is described. A water sample is extd. with 1 mL of n-hexane for 10 min; the extn. is repeated and an aliquot of the combined exts. is injected directly into a capillary gas chromatograph equipped with an electron capture detector. Results indicated that this **microextn.** technique can quant. recover PCB and DDT at their limits of quantitation. At 40 ng/L, an av. recovery close to 90% can be expected. The method may be particularly useful as a screening method for specific PCB congeners and related chems., due to the relatively low cost of operation in terms of chems., app., and time, with a min. amt. of org. solvent to be discarded or recycled.

L35 ANSWER 63 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:568855 CAPLUS

DOCUMENT NUMBER: 122:299601

TITLE: Extraction Kinetics of Small Charged Molecules in Water-in-Oil Microemulsion/Brine System

AUTHOR(S): Adachi, Motonari; Harada, Makoto; Nishita, Ryosuke; Shioi, Akihisa

CORPORATE SOURCE: Institute of Atomic Energy, Kyoto University, Uji, 611, Japan

SOURCE: J. Phys. Chem. (1995), 99(21), 8722-9

CODEN: JPCHAX; ISSN: 0022-3654

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The kinetics of solute extn. in sodium bis(2-ethylhexyl)sulfosuccinate (AOT) water-in-oil microemulsion/brine two-phase system was elucidated. The rate process of the tryptophan extn. was examd. by measuring the time evolution of the concn. profiles of tryptophan near the **liq./liq.** interface in a static diffusion cell and a flow junction cell. An anomalous phenomenon was obsd. for the solute transfer when water was coextd. to the microemulsion phase, whereas the anomaly disappeared when using the microemulsion presatd. with water. The interfacial rate process played an essential role in the extn. of solute with the presatd. microemulsion. The effects of some key factors on the interfacial rate process were examd. in AOT/n-heptane/NaCl-brine system using a stirred transfer cell. These factors were the elec. charge states

of solutes, the location of the solute entrapped in a microemulsion droplet, the direction of extn., the diam. of a droplet, and the surfactant concns. Org. solvent had a great effect on the interfacial rate process, indicating that the fusion process between a microemulsion droplet and the **liq.-liq.** interface is the rate-detg. step. The rate of extn. was formulated based on the rate-limiting fusion process and the fusion rate const. was detd.

L35 ANSWER 64 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1995:100642 CAPLUS

DOCUMENT NUMBER: 122:247738

TITLE: Analysis of old armament residues. A comparison of methods

AUTHOR(S): Lewin, Uta; Mueller, Sabine; Schaefer, Brit; Struppe, Cornelia; Efer, Juergen; Engewald, Werner

CORPORATE SOURCE: Inst. Anal. Chem., Univ. Leipzig, Leipzig, D-04103, Germany

SOURCE: LaborPraxis (1994), 18(8), 26-30

CODEN: LAPRDE; ISSN: 0344-1733

DOCUMENT TYPE: Journal

LANGUAGE: German

AB Various methods of sample prepn. (**liq.-liq.** extn., filtration, stationary phase **micro-extn.**, and adsorptive concn. in a programmed-temp. vaporizer) are compared in combination with gas chromatog. and HPLC variants for detection of nitroaroms. and nitroamines in polluted water samples from an old armament residue. The combined application of the methods improved the anal. results.

L35 ANSWER 65 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:563287 CAPLUS

DOCUMENT NUMBER: 121:163287

TITLE: Environmental water samples preparation for chemical analysis

AUTHOR(S): Starostin, L.; Witkiewicz, Z.

CORPORATE SOURCE: Inst. Chem. Defence against Chem. Warfare, Military Univ. Technol., Warsaw, Pol.

SOURCE: Chem. Anal. (Warsaw) (1994), 39(3), 263-79

CODEN: CANWAJ; ISSN: 0009-2223

DOCUMENT TYPE: Journal; General Review

LANGUAGE: English

AB The review with 91 refs. covers commonly used and new and modified sample prepn. methods, such as **liq.-liq.** extn. with one step process of ext. condensation, continuous flow thin layer head space technique, liq.-solid phase **microextn.**, and supercrit. fluid extn. Examples of sample prepn. for different substances and groups of compds. are given.

L35 ANSWER 66 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1994:541084 CAPLUS

DOCUMENT NUMBER: 121:141084

TITLE: Preconcentration of trace amounts of silver and cadmium by ion exchange and **microextraction** from water for flame atomic absorption spectrometry

AUTHOR(S): Tao, Shiquan; Shijo, Yoshio; Wu, Lin; Lin, Lin

CORPORATE SOURCE: Department of Applied Chemistry, China University of Geosciences, Wuhan, 430074, Peop. Rep. China

SOURCE: Analyst (Cambridge, U. K.) (1994), 119(7), 1455-8

CODEN: ANALAO; ISSN: 0003-2654

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method based on a combination of ion exchange and **micro-extn.** is suggested for preconcg. Ag and Cd from lake water. The ions were sorbed on a mini-column loaded with a strongly basic anion-exchange resin in the form of halide complex anions, and then Ag was

eluted with 6N HCl and Cd with 2N HNO<sub>3</sub>. The metals were further concd. into 0.2 mL Bu acetate with KI and Zephiramine as extn. agents. For flame

at. absorption spectrometric detn., 20 .mu.L of the org. phase were nebulized. Optimum conditions for ion exchange and **liq.-liq.** extn. were established, and data on interferences, precision and detection limits were detd. Using calibration graphs, the contamination level of Cd in preconcn. processes was also estd.

Sub-.mu.g

L-1 levels of Ag and Cd in water could be detd. at a concn. factor of 10,000.

L35 ANSWER 67 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:546212 CAPLUS

DOCUMENT NUMBER: 119:146212

TITLE: Online combination of automated micro **liquid**  
**-liquid** extraction and capillary gas  
chromatography for the determination of pesticides in  
water

AUTHOR(S): van der Hoff, G. Rene; Baumann, Robert A.; Brinkman,  
Udo A. Th.; van Zoonen, Piet

CORPORATE SOURCE: National Institute of Public Health and Environmental  
Protection (RIVM), P.O. Box 1, BA Bilthoven, 3720,  
Neth.

SOURCE: J. Chromatogr. (1993), 644(2), 367-73

CODEN: JOCRAM; ISSN: 0021-9673

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The use of selective detection such as thermionic detection (NPD) or  
flame

photometric detection (FPD) makes the use of addnl. cleanup unnecessary  
in

many instances. To obtain detection limits in the sub-ppb range with  
these detectors, typically the equiv. of .apprx.1 mL of sample is  
injected. Hence, **microextn.** techniques, transferring the  
pesticide content of 1 mL of aq. sample to a capillary gas chromatograph,  
are feasible. In this study, micro **liq.-liq.** extn.  
with Me-tert-Bu ether was combined with gas chromatog. (GC)-flame  
ionization detection in a automated setup, using GC sample introduction  
vols. of 500 .mu.L, which were transferred via an on-column interface  
equipped with an early vapor exit. In most cases, the recoveries were  
>70%, while the detection limit allowed quantification at the level of  
the

EC max. residue limits for water intended for human consumption (0.1  
.mu.g/L).

L35 ANSWER 68 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1993:109226 CAPLUS

DOCUMENT NUMBER: 118:109226

TITLE: Comparison of the **microextraction** procedure  
and Method 552 for the analysis of HAAs and  
chlorophenols

AUTHOR(S): Barth, Robert C.; Fair, Patricia Snyder

CORPORATE SOURCE: Technology Appl. Inc., Cincinnati, OH, 45268, USA

SOURCE: J. - Am. Water Works Assoc. (1992), 84(11),  
94-8

CODEN: JAWWA5; ISSN: 0003-150X

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A comparison of the accuracy, precision, and detection limits of the  
**microextn.** procedure and the USEPA Method 552 for detg. the  
concns. of haloacetic acids and chlorophenols in drinking water is  
presented. Both methods consist of **liq.-liq.** extn. of  
the water sample with methyl-tert-Bu ether, diazomethane derivatization  
of

the exts., and anal. by gas chromatog. (GC) with electron capture  
detection. The method 552, and the **microextn.** method, developed  
by the Metropolitan Water District of Southern California, gave  
comparable

precision and detection limits in the fortified reagent water and the  
drinking-water samples examd. in this study. The **microextn.**  
method provided greater accuracy in routine applications because of the

use of procedural stds. of GC calibration. Because the **microextn** . method is also less labor-intensive, it is preferred in most drinking-water applications.

L35 ANSWER 69 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1992:143044 CAPLUS  
DOCUMENT NUMBER: 116:143044  
TITLE: Chromatographic techniques for pollution analyses  
AUTHOR(S): Grob, Robert L.  
CORPORATE SOURCE: Dep. Chem., Villanova Univ., Villanova, PA, 19085, USA  
SOURCE: Environ. Monit. Assess. (1991), 19(1-3), 1-11  
CODEN: EMASDH; ISSN: 0167-6369  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English

AB A review with many refs. Pollution studies of air and water samples have been greatly enhanced by the use of chromatog. techniques. The selection of the proper detectors coupled with the various column types and substrates have broadened the capabilities of environmental analyses. Proper care in sampling protocols and sample treatment has steadily improved the sensitivity of these measurements. The recommended methods for air, wastewater, drinking water and solid waste samples all utilize some type of chromatog. anal. for the detn. of org. contaminants. Three complimentary techniques: i.e., headspace sampling (dynamic and static methods), **microextns.** (**liq.-liq.** and/or **liq.-solid**) and solid-phase extns. have expanded the capabilities of such studies to permit the anal. chemist to perform fast in-the-field monitoring, concrete low levels of analytes and det. solubilities of toxic substances. A discussion of other environmental areas which should be studied, along with the changes and/or modifications in anal. technol. which should be investigated, will be presented.

L35 ANSWER 70 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1989:41040 CAPLUS  
DOCUMENT NUMBER: 110:41040  
TITLE: Enhanced solvent extraction with water-in-oil microemulsions  
AUTHOR(S): Osseo-Asare, K.  
CORPORATE SOURCE: Dep. Mater. Sci. Eng., Pennsylvania State Univ., University Park, PA, 16802, USA  
SOURCE: Sep. Sci. Technol. (1988), 23(12-13), 1269-84  
CODEN: SSTEDS; ISSN: 0149-6395  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The conditions that favor enhanced extn. when a microemulsion phase contg. a surfactant and a chelating agent is used as the solvent-extn., org. phase is examd. theor. A general thermodyn. model of **liq.-liq.** distribution in reversed micellar systems is presented. The model treats the reversed micellar aggregates of the surfactant HA as a pseudophase and considers: the partition of a chelating extractant (HL) between the continuous org. phase and the reversed micellar pseudophase; transfer of the metal ion Mz+ into the continuous org. phase via reaction with HA monomers; partition of the Mz+-HA complex between the continuous org. phase and the reversed micellar pseudophase; reaction of the Mz+-HA complex with HL in the reversed micellar pseudophase; partition of the HL-contg. complex between the reversed micellar pseudophase and the



continuous org. phase. Quant. expressions are derived that enable identification of the chem. parameters that affect the liq.-liq. transfer process and therefore enable the rational design of microemulsion formulations for specific applications.

L35 ANSWER 71 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1983:598615 CAPLUS  
DOCUMENT NUMBER: 99:198615  
TITLE: **Liquid-liquid** extraction of metals  
from an aqueous solution using a micro-emulsion  
INVENTOR(S): Bauer, Denise; Komornicki, Jacques; Tellier, Jacques  
PATENT ASSIGNEE(S): Societe Nationale Elf Aquitaine S. A. , Fr.  
SOURCE: Eur. Pat. Appl., 16 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 88002	A1	19830907	EP 1983-400330	19830216 <--
EP 88002	B1	19851016		
R: DE, GB, IT				
FR 2522276	A1	19830902	FR 1982-3231	19820226 <--
FR 2522276	B1	19840921		
ES 519998	A1	19840416	ES 1983-519998	19830222 <--
AU 8311814	A1	19830901	AU 1983-11814	19830224 <--
ZA 8301256	A	19831130	ZA 1983-1256	19830224 <--
US 4555343	A	19851126	US 1983-469241	19830224 <--
BR 8300916	A	19831116	BR 1983-916	19830225 <--
CA 1186157	A1	19850430	CA 1983-422450	19830225 <--
PRIORITY APPLN. INFO.:		FR 1982-3231		19820226

AB Metals are extd. rapidly and with increased purity from aq. solns. (pH 0.5-8) by hydrophobic liqs. forming microemulsions in the presence of nonionic or anionic surfactants. Thus, extg. 1 L aq. soln. contg. 0.01M Ge(IV), 0.1M H2SO4, and 0.06M Na2SO4 (pH 1) with 1 L kerosine contg. 28 vol.% 1-pentanol, 0.2 mol 7-(3,3,5,5-tetramethyl-1-vinylhexyl)-8-quinolinol (Kelex 100 [29171-27-5]), and 50 g C9H19C6H4(OCH2CH2)7OH [9016-45-9] gave a 99.6% extn. of Ge into a microemulsion with extn. time 10 min, compared with 30 min without the surfactant.

L35 ANSWER 72 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1983:560690 CAPLUS  
DOCUMENT NUMBER: 99:160690  
TITLE: **Liquid-liquid** extraction by  
microemulsions of substances dissolved in water  
INVENTOR(S): Bauer, Denise; Komornicki, Jacques; Tellier, Jacques  
PATENT ASSIGNEE(S): Societe Nationale Elf Aquitaine S. A. , Fr.  
SOURCE: Eur. Pat. Appl., 20 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 83272	A1	19830706	EP 1982-402312	19821216 <--
EP 83272	B1	19850807		

R: DE, GB, IT

FR 2518890	A1	19830701	FR 1981-24267	19811228 <--
FR 2518890	B1	19840413		
US 4587106	A	19860506	US 1982-452708	19821223 <--
AU 8291905	A1	19830707	AU 1982-91905	19821224 <--
ES 518552	A1	19840216	ES 1982-518552	19821224 <--
CA 1205982	A1	19860617	CA 1982-418642	19821224 <--
ZA 8209498	A	19830928	ZA 1982-9498	19821227 <--
BR 8207501	A	19831018	BR 1982-7501	19821227 <--

PRIORITY APPLN. INFO.: FR 1981-24267 19811228

AB The extn. procedure involves treating an aq. soln. (contg. the substance that is to be extd.) with a hydrophobic liq., in the presence of an extg. compd., e.g., a chelating agent, that forms a hydrophobic-liq.sol. combination with the substance that is to be extd., the hydrophobic liq. being put into a microemulsion with the aq. soln., in such a way that distinct layers of the aq. soln., the hydrophobic liq., and the microemulsion are present. Surfactants (sulfonates, H3PO4 esters of ethoxylated alcs., sulfosuccinates, etc.) and cosurfactants (alcs., glycols, amines, etc.) are added. The procedure is exemplified on the extn. of Fe, Al, Ni, and Ge from acidic sulfate solns. by kerosine contg. various chelating agents and with various surfactants with .ltoreq.27 min of stirring.

L35 ANSWER 73 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1982:486374 CAPLUS

DOCUMENT NUMBER: 97:86374

TITLE: Simplified cleanup procedures for adipose tissue containing polychlorinated biphenyls, DDT, and DDT metabolites

AUTHOR(S): Smrek, Ann L.; Needham, Larry L.

CORPORATE SOURCE: Cent. Environ. Health, Dep. Health Hum. Serv., Atlanta, GA, 30333, USA

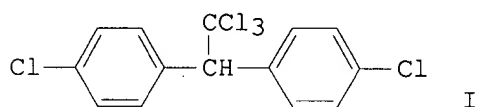
SOURCE: Bull. Environ. Contam. Toxicol. (1982), 28(6), 718-22

CODEN: BECTA6; ISSN: 0007-4861

DOCUMENT TYPE: Journal

LANGUAGE: English

GI



AB An anal. **micro extn.** procedure that eliminates the need for **liq.-liq.** partitioning in the cleanup of chlorinated pesticides in fat samples was developed. A glass chromatog. column packed with 1.5% SP2250/1.95% SP2401 on 100/120 mesh Supelcoport was used for DDT (I) [50-29-3] and its metabolites detn. A glass chromatog. column packed with 3% Se-30 on 80/100 Supelcoport was used for PCB (Aroclor 1260 [11096-82-5]) detn. In general, the recoveries were excellent.

L35 ANSWER 74 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1967:92242 CAPLUS

DOCUMENT NUMBER: 66:92242

TITLE: Apparatus for **liquid-liquid**

**microextraction** of pigments during  
distribution of acidic and phytol forms

AUTHOR(S): Kaler, V. L.; Podchufarova, G. M.  
SOURCE: Issled. Fiziol. Biokhim. Rast. (1966), 68-71  
CODEN: 16CIAT

DOCUMENT TYPE: Conference  
LANGUAGE: Russian

AB Microamts. of pigments were extd. using an app. comprising several  
extractors, consisting of containers and capillary tubes attached to a  
communicating tube, from which they could be shut off by cocks. The  
communicating tube was joined to a vacuum pump and to the atm. A buffer  
between the vacuum pump and the extractors served to prevent the  
penetration of water with accidental pressure drop in the water main.  
Exts. of the pigments were placed into test tubes below the extractors.  
Each sample (0.05-0.10 g. dry wt.) was divided into 2 portions and  
water-Me2CO exts. were obtained. The vol. of each ext. did not exceed  
5-7 ml. The exts. were transferred into test tubes. After addn. of 1 ml. of  
Et2O, the capillary tubes of the extractors were dipped into test tubes,  
the app. shut off from the air and connected with the vacuum pump. After  
passage of the complete mixt. into the extractors, the vacuum system was  
shut off. The lower aq. phase layer was transferred into different test  
tubes, to which Et2O was added, and the process was repeated 4-5 times.  
This is sufficient for the total extn. of phytol pigments by Et2O from  
the aq. Me2O ext. Since the phytolfree pigments can partially pass into  
Et2O, the Et2O exts. were washed with 0.02N NH4OH soln. The water-NH3 layer  
was then added to water-Me2CO and 0.5 ml. of Et2O was added; the pH was  
adjusted to 5 by dropwise addn. of a satd. NaH2PO4 soln. Phytol-free  
pigments passed into the Et2O layer and were extd. similarly to the  
phytol pigments. Microamts. of the pigments extd. were detd. fluorometrically.  
The advantage of the app. described is that 5 samples may be accurately  
analyzed simultaneously in 2-2.5 hrs.; previously 6 hrs. were required.

L35 ANSWER 75 OF 87 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 1950:36 CAPLUS  
DOCUMENT NUMBER: 44:36  
ORIGINAL REFERENCE NO.: 44:5a-d  
TITLE: A liquid-liquid  
**microextractor** for solvents lighter than  
water-use in phosphate analysis

AUTHOR(S): Kirk, Paul L.; Danielson, Maryann  
SOURCE: Anal. Chem. (1948), 20, 1122-3  
DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

AB The 10-ml. conical extn. chamber is connected at the bottom through a  
capillary stopcock to a 5-ml. side tube. The top of the chamber is  
connected through a 3-way stopcock either to a vacuum line or to a rubber  
bulb. Through a ground joint at the top passes a 2-4 ml. separatory  
funnel with a capillary stem reaching to the bottom of the extn. chamber.  
The liquid and the solvent are placed in the side tube, drawn by the  
vacuum into the extn. chamber, and mixed by a stream of air. The 3-way  
stopcock is turned to shut off the vacuum and the phases separate.  
Pressure of the rubber bulb forces the liquids into the side tube. The  
stopcock is closed when the interface between the two liquids reaches it.  
The upper stopcock to the separatory funnel is opened and the solvent  
phase forced into it. This stopcock is then closed to retain the solvent

and the procedure repeated. After the final extn. the separatory funnel contg. the solvent phase is lifted out. In the phosphate analysis (Berenblum and Chain, C.A. 32, 4906.8, 4907.1), the side tube is cleaned after extn. and the butyl or isobutyl alc. ext. of phosphomolybdic acid allowed to flow from the separatory funnel into the extn. chamber. SnCl<sub>2</sub> soln. is introduced and the resulting molybdenum blue is isolated in the separatory funnel, from which it can be taken for measurement.

L35 ANSWER 76 OF 87 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1998:439694 BIOSIS  
DOCUMENT NUMBER: PREV199800439694  
TITLE: Solid-phase **microextraction** for determining the binding state of organic pollutants in contaminated water rich in humic organic matter.  
AUTHOR(S): Poerschmann, Juergen (1); Kopinke, Frank-Dieter; Pawliszyn, Janusz  
CORPORATE SOURCE: (1) Cent. Environ. Res., Permoserstr. 15, 04318 Leipzig Germany  
SOURCE: Journal of Chromatography A, (Aug. 14, 1998) Vol. 816, No. 2, pp. 159-167.  
ISSN: 0021-9673.  
DOCUMENT TYPE: Article  
LANGUAGE: English  
AB Solid-phase **microextraction** (**SPME**) in both conventional and headspace mode was used for determining the freely available and reversibly bound fraction of phenols and polycyclic aromatic hydrocarbons in contaminated water rich in dissolved polymeric organic matter (DOM). The **SPME** results obtained by using internal calibration with deuterated surrogates gave the total analyte concentration based on the identical partitioning behaviour of both, native pollutants and deuterated spikes, and agreed well with data from exhaustive **LLE**. Data obtained with direct and headspace **SPME** are very similar. Investigated matrices include both contaminated water and artificial DOM solutions. The DOM compounds were isolated from different aquatic and terrestrial sources and cover a wide range of hydrophobicity. A new approach based on progressive dilution of samples rich in DOM was developed for determining both the freely-dissolved fraction of an unknown analyte and its partition coefficients. Theoretical considerations provide strong evidence that the commonly used term 'concentration' in **SPME** analysis should be replaced by the more appropriate term 'activity' of the solute.

L35 ANSWER 77 OF 87 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:427993 BIOSIS  
DOCUMENT NUMBER: PREV199799727196  
TITLE: Comparison of extraction methods of volatile aroma compounds in processed grapefruit juice.  
AUTHOR(S): Jella, P.; Rouseff, R.  
CORPORATE SOURCE: Citrus Res. Educ. Cent., 700 Experiment Station Rd., Lake Alfred, FL 33850 USA  
SOURCE: Abstracts of Papers American Chemical Society, (1997) Vol. 214, No. 1-2, pp. AGFD 78.  
Meeting Info.: 214th American Chemical Society National Meeting Las Vegas, Nevada, USA September 7-11, 1997  
ISSN: 0065-7727.  
DOCUMENT TYPE: Conference; Abstract  
LANGUAGE: English

L35 ANSWER 78 OF 87 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:166053 BIOSIS  
DOCUMENT NUMBER: PREV199799465256  
TITLE: Determination of phenolic compounds in waste water by  
solid-phase **micro extraction**.  
AUTHOR(S): Moeder, M. (1); Schrader, S.; Franck, U.; Popp, P.  
CORPORATE SOURCE: (1) Cent. Environ. Res. Ltd., Dep. Anal. Chem., PO. Box 2,  
Permoserstrasse 15, D-04318 Leipzig Germany  
SOURCE: Fresenius' Journal of Analytical Chemistry, (1997) Vol.  
357, No. 3, pp. 326-332.  
ISSN: 0937-0633.  
DOCUMENT TYPE: Article  
LANGUAGE: English

AB The solid-phase **micro extraction** technique (**SPME**) using a polyacrylate coated fibre has been examined with the aim to determine phenolic components in strong contaminated waste water. Considering the high contents and the great variety of accompanying organic material, the feasibility of **SPME**-GC-MS analysis has been tested. In this connection the influence of matrix components on the **SPME** results are discussed. EPA-604 phenols and some other phenolic components have been sampled by a polar fibre under standard conditions and in original waste water. The effects of defined concentrations of humic acids and surfactants on the recovery of phenols have been studied. The influence of other organics. e.g. hexachlorocyclohexane isomers, on the recoveries of phenols are discussed.

Finally, a comparison between results of a **liquid-liquid** extraction and **SPME** describes the performance of **SPME** regarding the phenol analysis of strong-loaded water.

L35 ANSWER 79 OF 87 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1997:78913 BIOSIS  
DOCUMENT NUMBER: PREV199799385616  
TITLE: Strategies for chromatographic analysis of pesticide residues in water.  
AUTHOR(S): Balinova, Anna  
CORPORATE SOURCE: Plant Protection Inst., Kostinbrod 2230 Bulgaria  
SOURCE: Journal of Chromatography A, (1996) Vol. 754, No. 1-2, pp. 125-135.  
ISSN: 0021-9673.  
DOCUMENT TYPE: General Review  
LANGUAGE: English

AB A review is presented of the modern techniques and approaches in methods for pesticide residue analysis in water matrices. The state of the art of the individual steps (extraction, clean-up, separation, identification, quantitation) of the chromatographic methods is reviewed with emphasis laid on emerging techniques which have gained popularity. The new approaches are discussed with respect to their relevancy to the requirements for increasing the sensitivity of detection and reliability of identification and quantitation at low levels of concentrations, arising from the European Community Drinking Water Directive.

L35 ANSWER 80 OF 87 BIOSIS COPYRIGHT 2002 BIOLOGICAL ABSTRACTS INC.  
ACCESSION NUMBER: 1996:569339 BIOSIS  
DOCUMENT NUMBER: PREV199799298695  
TITLE: Determination of phenolic compounds in water and waste water.  
AUTHOR(S): Puig, D.; Barcelo, D.  
CORPORATE SOURCE: Dep. Environ. Chem., CID-CSIC, c/Jordi Girona, 18-26,  
08034

Barcelona Spain  
SOURCE: Trends in Analytical Chemistry, (1996) Vol. 15, No. 8, pp. 362-375.  
ISSN: 0165-9936.  
DOCUMENT TYPE: General Review  
LANGUAGE: English  
AB This article is an overview of current methodologies for the determination of phenolic compounds in various water types. Classical approaches such as **liquid-liquid** extraction (**LLE**) or liquid-solid extraction (**LSE**) combined with gas or liquid chromatography are reviewed as well as emerging techniques such as capillary zone electrophoresis. The potential of immunoassays and biosensors as complementary approaches to chromatographic methods is shown.

L35 ANSWER 81 OF 87 EMBASE COPYRIGHT 2002 ELSEVIER SCI. B.V.  
ACCESSION NUMBER: 97341758 EMBASE  
DOCUMENT NUMBER: 1997341758  
TITLE: Aqueous alkylchloroformate derivatisation and solid-phase **microextraction**: Determination of amphetamines in urine by capillary gas chromatography.  
AUTHOR: Ugland H.G.; Krogh M.; Rasmussen K.E.  
CORPORATE SOURCE: H.G. Ugland, Institute of Pharmacy, University of Oslo, P.O. Box 1068, Blindern, Oslo, Norway  
SOURCE: Journal of Chromatography B: Biomedical Applications, (1997) 701/1 (29-38).  
Refs: 31  
ISSN: 0378-4347 CODEN: JCBBEP  
S 0378-4347(97)00350-2  
PUBLISHER IDENT.:  
COUNTRY: Netherlands  
DOCUMENT TYPE: Journal; Article  
FILE SEGMENT: 029 Clinical Biochemistry  
040 Drug Dependence, Alcohol Abuse and Alcoholism  
LANGUAGE: English  
SUMMARY LANGUAGE: English  
AB The alkylchloroformate derivatisation and solid-phase **microextraction** of amphetamine and methamphetamine directly in urine samples prior to capillary gas chromatographic analysis is described. The alkylchloroformate reagent was added to the urine sample, which was adjusted to pH 10.8, and an internal standard was added. The resulting products were water-stable carbamates that were extracted without organic solvent. The polydimethylsiloxane coated fibre was inserted into the modified sample and agitated for 14 min. The fibre with the extracted derivatisation products was injected into the capillary gas chromatograph. The extracted carbamates were evaporated at 300.degree.C in the split-splitless injection port of the gas chromatograph, separated on a methylsilicone capillary column and detected by either a nitrogen-phosphorus detector or by mass spectrometry. The method was shown to be reproducible with a detection limit of 50 ng/ml of amphetamine and methamphetamine in urine.

L35 ANSWER 82 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)  
ACCESSION NUMBER: 1998:731679 SCISEARCH  
THE GENUINE ARTICLE: 120YN  
TITLE: Determination of organonitrogen pesticides in large volumes of surface water by **liquid-**

**liquid** and solid-phase extraction using gas chromatography with nitrogen-phosphorus detection and liquid chromatography with atmospheric pressure chemical ionization mass spectrometry

AUTHOR: Sabik H (Reprint); Jeannot R  
 CORPORATE SOURCE: ENVIRONM CANADA, ST LAWRENCE CTR, 105 MCGILL ST, 7TH FLOOR, MONTREAL, PQ H2Y 2E7, CANADA (Reprint); BUR RECH GEOL & MINIERES, SERV MINIER NATL, F-45060 ORLEANS 02, FRANCE

COUNTRY OF AUTHOR: CANADA; FRANCE  
 SOURCE: JOURNAL OF CHROMATOGRAPHY A, (4 SEP 1998) Vol. 818, No. 2, pp. 197-207.  
 Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS.  
 ISSN: 0021-9673.

DOCUMENT TYPE: Article; Journal  
 FILE SEGMENT: PHYS; LIFE  
 LANGUAGE: English  
 REFERENCE COUNT: 38

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB During a recent study to determine the fluxes and fates of contaminants

in the St. Lawrence River, the majority of organonitrogen pesticides analysed in samples of surface water were found in the dissolved phase. This paper compares two extraction techniques and two analytical techniques for 10 chemicals (metolachlor, seven triazines and two degradation products of atrazine-cyanazine-propazine and simazine) in the dissolved phase in large volumes of surface water, using a fibre glass filter with 0.7  $\mu$ m porosity. Samples of filtered surface water (1-20 l) were extracted by means of a **liquid-liquid** technique using the Goulden large-sample extractor, and by means of a solid-phase extraction technique, using cartridges filled with 500 mg of a large particle-size graphitized carbon black as adsorbent: Clarbopack B (500-666

$\mu$ m) The pesticides were analysed by gas chromatography on two DB-5 and DB-210 capillary columns with nitrogen-phosphorus detection (GC-NPD) and by liquid chromatography coupled with mass spectrometry equipped with an atmospheric pressure chemical ionization interface (LC-APCI-MS). The recoveries were high (67-100%) for the majority of the target pesticides in a volume of 17.85 l of Milli-Q water, compared to recoveries in the same volume of filtered surface water (51-102%). The detection limits ranged from 0.4 to 4 ng/l and from 0.6 to 3 ng/l for GC-NPD and

LC-ACPI-MS

techniques, respectively. (C) 1998 Elsevier Science B.V. All rights reserved.

L35 ANSWER 83 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 97:532493 SCISEARCH

THE GENUINE ARTICLE: XJ932

TITLE: Chlorinated C-1- and C-2-hydrocarbons and monocyclic aromatic hydrocarbons in marine waters: An overview on fate processes, sampling, analysis and measurements

AUTHOR: Dewulf J; VanLangenhove H (Reprint)

CORPORATE SOURCE: STATE UNIV GHENT, FAC AGR & APPL BIOL SCI, DEPT ORGAN CHEM, COUPURE LINKS 653, B-9000 GHENT, BELGIUM (Reprint); STATE UNIV GHENT, FAC AGR & APPL BIOL SCI, DEPT ORGAN CHEM, B-9000 GHENT, BELGIUM

COUNTRY OF AUTHOR: BELGIUM

SOURCE: WATER RESEARCH, (AUG 1997) Vol. 31, No. 8, pp. 1825-1838.

Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD,  
LANGFORD LANE, KIDLINGTON, OXFORD, ENGLAND OX5 1GB.  
ISSN: 0043-1354.

DOCUMENT TYPE: General Review; Journal  
FILE SEGMENT: AGRI  
LANGUAGE: English  
REFERENCE COUNT: 94

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB This overview focuses on fate processes and methods for the sampling and analysis of 13 chlorinated C-1- and C-2-hydrocarbons and monocyclic aromatic hydrocarbons in marine water samples. Reported results obtained by analysing field samples with the methods described are summarized. The main sources and the input pathways by which the volatiles enter the marine environment are presented. Removal mechanisms like degradation and exchange with other environmental compartments, especially the atmosphere, are briefly discussed. Sampling systems and analytical techniques are reviewed. Aspects like contamination generated by the sampling materials or treatment and storage of the samples until analysis are discussed. The performance of preconcentration techniques such as liquid extraction, purge-and-trap and other (less often used) techniques are compared. Details on the analyses sensu strictu (separation, detection, limits of detection and reproducibility) are given. Finally, results of measurements of these compounds in estuaries, beach waters, bays, fjords, coastal and shelf sea waters and open seas are presented. (C) 1997 Elsevier Science Ltd.

L35 ANSWER 84 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 97:435260 SCISEARCH

THE GENUINE ARTICLE: XB516

TITLE: Present trends in analysis of organic compounds in water samples by high-resolution gas chromatography and its combination with preconcentration techniques

AUTHOR: Strakova M (Reprint); Matisova E

CORPORATE SOURCE: SLOVAK TECH UNIV, FAC CHEM TECHNOL, RADLINSKEHO 9, BRATISLAVA 81237, SLOVAKIA (Reprint)

COUNTRY OF AUTHOR: SLOVAKIA

SOURCE: CHEMICKE LISTY, (25 FEB 1997) Vol. 91, No. 5, pp. 330-341.

Publisher: CHEMICKE LISTY, PELLEOVA 24, PRAGUE 6, CZECH REPUBLIC 160 00.

ISSN: 0009-2770.

DOCUMENT TYPE: General Review; Journal

FILE SEGMENT: PHYS

LANGUAGE: Czech

REFERENCE COUNT: 135

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB A survey of modern methods for the analysis of water samples by capillary GC is presented. The methods are classified as direct methods, where water sample is directly introduced into the GC system, and indirect methods, where water is eliminated prior to transferring the analytes to a column. The direct introduction is realized by on-column, loop-type, or programmed-temperature vaporized injection. Water elimination is based on liquid-liquid, solid-phase, and gas extractions.

L35 ANSWER 85 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 96:567701 SCISEARCH



THE GENUINE ARTICLE: UY746

TITLE: METHOD DEVELOPMENT FOR TRACE ANALYSIS OF  
HETEROAROMATIC-COMPOUNDS IN CONTAMINATED GROUNDWATER  
AUTHOR: JOHANSEN S S (Reprint); HANSEN A B; MOSBAEK H  
CORPORATE SOURCE: TECH UNIV DENMARK, INST ENVIRONM SCI & ENGN, BLDG 115,  
DK-2800 LYNGBY, DENMARK (Reprint); MINIST ENVIRONM &  
ENERGY, NATL ENVIRONM RES INST, DEPT ENVIRONM CHEM,  
DK-4000 ROSKILDE, DENMARK  
COUNTRY OF AUTHOR: DENMARK  
SOURCE: JOURNAL OF CHROMATOGRAPHY A, (12 JUL 1996) Vol.  
738, No. 2, pp. 295-304.  
ISSN: 0021-9673.  
DOCUMENT TYPE: Article; Journal  
FILE SEGMENT: PHYS; LIFE  
LANGUAGE: ENGLISH  
REFERENCE COUNT: 36

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB An analytical method providing high sensitivity (limit of quantitation of 50 ng/l) with acceptable reproducibility (mean R.S.D. 19%) has been developed for determining heteroaromatic compounds in creosote-contaminated groundwater. The best technique (highest recovery and reproducibility) found between **liquid-liquid** extraction using either dichloromethane, diethyl ether or pentane and solid-phase extraction with reversed-phase bonded columns, was the classical liquid extraction with dichloromethane from weak basic solutions and GC-MS (selective ion monitoring) analysis of concentrated extracts.

L35 ANSWER 86 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 96:427563 SCISEARCH

THE GENUINE ARTICLE: UN271

TITLE: METHODS OF ISOLATION AND DETERMINATION OF VOLATILE  
ORGANOHALOGEN COMPOUNDS IN NATURAL AND TREATED WATERS  
AUTHOR: BIZIUK M (Reprint); PRZYJAZNY A  
CORPORATE SOURCE: GDANSK TECH UNIV, FAC CHEM, G NARUTOWICZA 11-12, PL-80952  
GDANSK, POLAND (Reprint); GMI ENGN & MANAGEMENT INST,  
FLINT, MI, 48504  
COUNTRY OF AUTHOR: POLAND; USA  
SOURCE: JOURNAL OF CHROMATOGRAPHY A, (10 MAY 1996) Vol.  
733, No. 1-2, pp. 417-448.  
ISSN: 0021-9673.  
DOCUMENT TYPE: General Review; Journal  
FILE SEGMENT: PHYS; LIFE  
LANGUAGE: ENGLISH  
REFERENCE COUNT: 393

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB Volatile organohalogen environmental pollutants and their sources and the routes of entry into various elements of the environment are described. Comprehensive literature data on the concentrations of these pollutants in natural and treated waters and in wastewaters in various countries are tabulated and discussed. A wide selection of the techniques for the isolation and preconcentration of the above pollutants are presented and discussed. Direct aqueous injection into a capillary column, **liquid-liquid** extraction, solid-phase extraction and headspace analysis are emphasized.

L35 ANSWER 87 OF 87 SCISEARCH COPYRIGHT 2002 ISI (R)

ACCESSION NUMBER: 95:409734 SCISEARCH

THE GENUINE ARTICLE: RC072

TITLE: TRACE-LEVEL ANALYSIS OF MICROPOLLUTANTS IN AQUEOUS  
SAMPLES USING GAS-CHROMATOGRAPHY WITH ONLINE SAMPLE ENRICHMENT  
AND LARGE-VOLUME INJECTION  
AUTHOR: MOL H G J (Reprint); JANSSEN H G M; CRAMERS C A; VREULS J  
J; BRINKMAN U A T  
CORPORATE SOURCE: EINDHOVEN UNIV TECHNOL, INSTRUMENTAL ANAL LAB, POB 513,  
5600 MB EINDHOVEN, NETHERLANDS (Reprint); FREE UNIV  
AMSTERDAM, DEPT ANALYT CHEM, 1081 HV AMSTERDAM,  
NETHERLANDS  
COUNTRY OF AUTHOR: NETHERLANDS  
SOURCE: JOURNAL OF CHROMATOGRAPHY A, (26 MAY 1995) Vol.  
703, No. 1-2, pp. 277-307.  
ISSN: 0021-9673.  
DOCUMENT TYPE: General Review; Journal  
FILE SEGMENT: PHYS; LIFE  
LANGUAGE: ENGLISH  
REFERENCE COUNT: 120

\*ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS\*

AB In this review article an overview of methods for the analysis of  
aqueous samples with capillary gas chromatography is presented. The  
methods can be classified into two approaches: a direct approach in which  
water is directly introduced onto the GC column, and an indirect approach  
in which water is eliminated, i.e., by **liquid-liquid**  
extraction or solid-phase extraction, prior to introduction of the  
analytes onto the CC column. The emphasis is on methods in which sample  
preparation and GC analysis are combined on-line. An outline of methods  
for large volume injection is also presented as the use of on-line  
systems  
often involves the introduction of large volumes of sample extract.